



VERSION WITH MARKINGS TO SHOW CHANGES MADE:

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MAY -9 2002  
TC 2800 MAIL ROOM

**IN THE SPECIFICATION:**

Change the title to read: --Sheet-Layered Lamination Stack Slotted Rotor For

C3 Electric Motor--.

**IN THE CLAIMS:**

**Amend** the following claims:

1. (Twice Amended) Electric motor including a stator and a rotor which defines a rotor axis and includes at least a stack of laminations layered by sheets and provided with slots for receiving rotor windings, wherein at an end face of the at least one stack of laminations, there is provided at least one rotor end sheet which is made of high-strength fine-grain structural steel and ~~exhibits matches~~, at least in proximity of the rotor axis, a ~~geometric~~ shape of the sheets layered in the stack of laminations.
6. (Amended) An electric motor, comprising:
  - a stator; and
  - a rotor defined by a rotor axis and having a stack of laminations which is layered by sheets, said stack of laminations having opposite end faces, and two rotor end sheets, one of the rotor end sheets provided on one of the end faces of the stack of laminations, and the other one of the rotor end sheets provided on the other one of the end faces of the stack of

laminations, each of said rotor end sheets being made of high-strength fine-grain structural steel and exhibiting matching, at least in proximity of the rotor axis, a geometric shape of the sheets layered in the stack of laminations.

## REMARKS

The last Office Action of January 30, 2002 has been carefully considered. Reconsideration of the instant application in view of the foregoing amendments and the following remarks is respectfully requested.

Claims 1 to 9 are pending in the application.

It is noted that the title of the invention is objected to as being non-descriptive. It is further noted that claims 1 to 9 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 6 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Pat. No. 3,662,200 (hereinafter "Rank et al").

Claims 2, 3, 7 and 8 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Rank et al in view of U.S. Pat. No. 3,590,208 (hereinafter "Martini et al. ").

Claims 4, 5 and 9 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Rank et al in view of Martini et al. and further in view of common knowledge in the art.

## OBJECTION TO THE TITLE

Applicant has changed the title, as suggested by the Examiner. Withdrawal

of the objection to the title is thus respectfully requested.

### **REJECTION UNDER 35 U.S.C. §112, SECOND PARAGRAPH**

Applicant has amended claims 1 and 6 by deleting the reference to "geometric", notwithstanding applicant's belief that claims 1 and 6, as originally filed in this context were clear. Claims 1 and 6 as originally set forth that the rotor end sheets are configured to match, at least in proximity of the rotor axis, the geometry, i.e. shape, of the laminations of the rotor core. Although, claims 1 and 6 do not specifically set forth the actual shape of the laminations, it is applicant's contention that such express definition is not required and indeed would unduly limit the scope of the invention and not properly define the full scope of what the inventor has invented. Still, applicant has changed the wording of the claims involved but asserts that these changes to claims 1 and 6 are cosmetic in nature and do not narrow the claim element to trigger prosecution history estoppel within the meaning of *Festo*-decision. *Festo Corp. v. Shoketsu Kinsoku Kogyo Kabushiki Co.*, 56 USPQ2d 1865 (Fed. Cir. Nov. 29, 2000)(en banc).

Withdrawal of the rejection of the claims 1-9 under 35 U.S.C. §112, second paragraph is thus respectfully requested.

### **REJECTION UNDER 35 U.S.C. §102(b)**

The rejection under 35 U.S.C. 102(b) is respectfully traversed.

The present invention, as set forth in claims 1 and 6 on file, is directed to an electric motor which has a rotor with a rotor core that is provided with end portions made of high-strength, fine grain structural steel and configured to match the shape of the laminations of the rotor core. As stated on page 5, paragraph [0019], through configuration of the end portions in this manner, centrifugal forces will act primarily upon the rotor end sheets, so that the slots of the stack of laminations are relieved, and winding heads as well as the windings themselves are supported essentially by the rotor end sheets.

The Rank et al. reference discloses a cage rotor having a rotor core (30) in the form of a stack of laminations, wherein the ends of the rotor core have end supports (58, 60) which are made of a high strength metal material. As shown in Fig. 2, the end supports have a three-dimensional shape with recessed portions forming cavities (62, 64) to receive end rings (42, 44) that extend axially from the ends of the rotor core. Unlike the present invention, which sets forth end portions that **match** the shape of the laminations, the end supports have a configuration that does not correspond to the shape of the laminations of the rotor core. This is clearly shown in Fig. 2. In addition, the end portions according to the present invention are thin sheets, whereas the end supports of Rank et al. are three-dimensional in structure and thus result in a substantially greater axial extension. For that reason, the end supports of Rank et al. are made of **nonmagnetic** material (compare col. 3, lines 12 to 14). Clearly, the selected material for the end supports in Rank et al. differs from the **magnetic** steel material characteristics as taught in the present invention.

The Examiner opined, however, in the instant Office Action that the end supports are made of "high-strength fine-grain structural steel". Applicant fails to ascertain any reference in Rank et al. to such a material selection. Indeed, the Examiner fails refer to any passage in the Rank et al. disclosure. Accordingly, the Examiner is requested to indicate to applicant which specific portion of the Rank et al. reference the Examiner refers to base his rejection on.

Withdrawal of the rejection of claims 1 and 6 under 35 U.S.C. §102(b) and allowance of claims 1 and 6 are thus respectfully requested.

#### **REJECTION UNDER 35 U.S.C. §103(a)**

Claims 2-5, 7-9 which depend from claims 1 and 6, respectively, and therefore contain all the limitations thereof, patentably distinguish over the applied prior art in the same manner as claims 1 and 6.

The Examiner further notes that it is common knowledge in the art to select the appropriate materials to make the electric motor (10) a high-speed capable, heavy-duty classified asynchronous motor. Applicant believes that this rejection is improper in the context of the present invention and requests a citation or an Examiner's affidavit that provides such citations. In addition, applicant wishes to note that the problem of using open or closed slots in high-speed asynchronous motors is not disclosed in any way in the Martini reference.

Please note also that it is generally known to the skilled artisan in the field that high-speed motors should meet particular demands and operate at speeds of

more than 3000 rpm up to 10,000 rpm and more. It is precisely the provision of the combination, as set forth in claims 1 and 6, that results in a motor configuration that is appropriate for such high-speed operation (compare, e.g. [0004] of the instant specification. It is thus applicant's belief that a combination of the Rank et al. and Martini references would not produce the invention, as set forth in claims 4, 5 and 9.

Withdrawal of the rejection of claims 2-5, 7-9 under 35 U.S.C. §103(a) and allowance thereof are thus respectfully requested.

#### **CITED REFERENCES**

Applicant has also carefully scrutinized the further cited prior art and finds it without any relevance to the newly submitted claims. It is thus felt that no specific discussion thereof is necessary.

#### **CONCLUSION**


Applicant believes that when the Examiner reconsiders the claims in the light of the above comments, he will agree that the invention is in no way properly met or anticipated or even suggested by any of the references however they are considered.

In view of the above presented remarks and amendments, it is respectfully submitted that all claims on file should be considered patentably differentiated over the art and should be allowed.

Reconsideration and allowance of the present application are respectfully requested.

Should the Examiner consider necessary or desirable any formal changes anywhere in the specification, claims and/or drawing, then it is respectfully requested that such changes be made by Examiner's Amendment, if the Examiner feels this would facilitate passage of the case to issuance. If the Examiner feels that it might be helpful in advancing this case by calling the undersigned, applicant would greatly appreciate such a telephone interview.

Respectfully submitted,

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